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SENSORY AND INSTRUMENTAL ANALYSIS IN SNAP BEAN

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INTRODUCTION

Snap Bean (*Phaseolus vulgaris* L.) belongs to the family of legumes, for the production of this species is important vigor, yield, be resistant to diseases and pests; produce light green pods of shape and size that meet the requirements of the market; possess pleasant taste; have few wires or fibers, besides being a good source of protein for human nutrition (FILGUEIRA, 2013). Based on the economic importance of this activity in Brazil and that can make viable small farms, this work had the objective of sensory and instrumental evaluation of snap bean genotypes in order to verify which would have good acceptance with the consumer and could compete with the cultivars the market.

MATERIAL AND METHODS

The work was conducted at 23° 23' south latitude and 51° 11' west longitude and average altitude of 566m. Five genotypes of snap bean (HAV 06, HAV 11, HAV 28, HAV 50 and HAV 69) were sown from CIAT (International Center for Tropical Agriculture) and a standard cultivar, TORINO, already Indeterminate growth, with cylindrical shaped pods, as well as lineages. Harvesting was performed when the pods were tender and reached their ideal point 70 days after sowing or 20 days after flowering. After the pods were harvested, the sensorial analyzes were started.

RESULTS AND DISCUSSION

The HAV 69 lineage obtained the highest mean score (5.7) between the lines, on a scale varying from 1 to 7, being between "moderately liked" and "liked very much" and did not differ from Standard TORINO. In relation to the purchase intention, the HAV 69 line was again the one that obtained the highest average grade (4.1) among the lineages, on a scale ranging from 1 to 5, being close to "possibly buy" and did not differ from the control. It can be observed that there is a strong influence of the appearance of the pods on the intention of purchase by the consumers, since the treatments with greater sensorial notes presented greater intention to buy (Table 1).

Table 1. Sensory evaluation of appearance and purchase intention of pods

Genotypes	Appearance note	Intention to purchase note
TORINO	5,1 ^{a,b} ± 1,0	3,7 ^{a,b} ± 0,9
HAV 06	4,9 ^{b} ± 1,1	3,5 ^{b} ± 0,9
HAV 11	4,9 ^{b} ± 1,5	3,3 ^{b,c} ± 1,3
HAV 28	4,6 ^{b,c} ± 1,3	3,1 ^{b,c} ± 1,0
HAV 50	3,9 ^{c} ± 1,6	2,8 ^{c} ± 1,2
HAV 69	5,7 ^{a} ± 0,9	4,1 ^{a} ± 0,9

Means followed by ^{a,b,c} do not differ by Dunnett test at 5% probability.

The L* value measures the luminosity contained in the sample, and the higher the L* value the clearer the sample, the HAV 69 genotype has the lighter pods and does not differ from the TORINO standard. It turns out that the higher the brightness, the better the note for appearance and the greater the purchase intention for the pods. The variation of the value of a* shows the intensity of the green color in the sample, and the smaller the value of a*, the greater the intensity of green contained in the sample. The HAV 6 lineage has less green intensity than the other pods. There was no difference between the TORINO standard, which obtained the lowest value of a*, therefore it has the highest green intensity in its pods, and the other strains (HAV 11, HAV 28, HAV 50, HAV 69). The variation of the value of b* shows the intensity of the yellow color contained in the sample, the higher the value of b*, the greater the yellow color intensity in the sample. It can be observed that the cultivar TORINO has a higher yellow intensity than the others (Table 2).

Table 2. Color parameters (L *, a *, b *) of the cooked pods.

Genotypes	L*	a*	b*
TORINO	$38{,}5^{a} \pm 2{,}8$	$-7{,}3^{a,\,b} \pm 1{,}2$	$19{,}9^{c} \pm 2{,}1$
HAV 06	$34{,}3^{d} \pm 2{,}1$	$-6{,}7^{b,\,c} \pm 1{,}9$	$16{,}4^{a} \pm 2{,}1$
HAV 11	$35{,}4^{c,\,d} \pm 2{,}6$	$-7{,}0^{a,\,b,\,c} \pm 1{,}0$	$17{,}8^{b} \pm 2{,}6$
HAV 28	$38{,}5^{a} \pm 4{,}6$	$-7{,}2^{a,\,b,\,c} \pm 1{,}6$	$21{,}3^{d} \pm 3{,}9$
HAV 50	$37{,}6^{a,\,b} \pm 3{,}0$	$-7{,}6^{a} \pm 1{,}5$	$19{,}4^{c} \pm 2{,}2$
HAV 69	$36{,}9^{b,\,c} \pm 2{,}2$	$-6{,}5^{c} \pm 1{,}7$	$18{,}9^{b,\,c} \pm 2{,}0$

Means followed by $^{\mathbf{a,b,c}}$ do not differ by Dunnett test at 5% probability.

After cooking some changes in the coloring characteristics of the pods occurred, such as the decrease in the L* value, and that each pod behaved differently from the raw pod. The Torino, HAV 28 and HAV 50 are the clearest and do not differ statistically from each other, and HAV 6 and HAV 11 are the darkest ones. However, the HAV 28, HAV11, HAV 6 and HAV 69 obtained lower results, therefore a greater intensity of the green color, and did not differ significantly from the standard.

The cooking had an influence on the coloring parameters of the pods, it is observed that within the same line the cooking decreases the value of L*, and the raw pods are lighter than the cooked pods, that is, they have a higher value of L*. However, the value of a*, did not change significantly between raw and cooked pods. However, for the value of b*, significant changes occurred, and the raw pods have a higher yellow content, and when they pass through the cooking process this value is decreased, except for HAV 28 lineage that did not present difference in the value of b*.

CONCLUSION

Appearance of pods has a direct influence on the intention of purchase by consumers. The HAV 69 genotype has good appearance and intent to purchase grades, with the potential to compete with traditional market cultivars and a new option for family farmers.

REFERENCES

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